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November 8, 2016

MEMORANDUM

TO: Council members

FROM: Charlie Grist, Tina Jayaweera, and Kevin Smit

SUBJECT: Bonneville Draft Energy Efficiency Action Plan for 2016-2021

BACKGROUND: Bonneville draft Energy Efficiency Action Plan for 2016-2021 was released for comment October 17. Staff will brief the Council on its initial review of the draft plan, key findings, and high-level recommendations.

Presenters: Energy Efficiency Team Charlie Grist, Tina Jayaweera, Kevin Smit

Summary: Bonneville's draft Energy Efficiency Action Plan for 2016-2021 (Draft EE Plan) documents the agency's current view of how it will meet its share of Council Plan efficiency goals. The draft plan is out for comment. Staff is reviewing the draft plan and preparing comments to submit by November 18.

Bonneville's Draft EE Plan is used as a tool within Bonneville to communicate to management, guide program development and operation, and inform stakeholders. The Draft EE Plan maps out how the funded activities are expected to produce the savings needed to reach the conservation goals.

Bonneville's Draft EE Plan identifies four categories of savings: utility program savings funded by EEI, utility program savings self-funded by utilities, market transformation savings from NEEA, and momentum savings from new state codes, federal standards, or market uptake. Staff will brief the Council on how the draft plan was developed, its review and analysis of key plan elements and recommendations.

The draft EE Plan concludes that Bonneville and its customer utilities can almost meet the six-year goal set out in the Seventh Power Plan with the resources identified and expected levels of savings. But, there are significant uncertainties that Bonneville and its customer utilities face in implementing the plan. The draft EE Plan could do a better job of identifying these risks and making the EE Plan more of a strategic tool to help guide Bonneville's decision-making and adaptive management to deal with changing circumstances.

Relevance: Bonneville's implementation of its energy efficiency program and obligations is a key element of the Council's Power Plan.

Workplan: A.1.1. Conservation - Coordinate with regional entities to ensure the regional goal for cost-effective conservation is achieved.

Background: In July, Richard G  nec   and Allie Mace briefed the Council on the agency's draft Energy Efficiency Plan that Bonneville uses to guide its approach to achieve its share of near-term Seventh Plan Conservation goals.¹ In October, the Council discussed Bonneville's plan to reduce its Energy Efficiency funding by about \$5 million per year beginning in 2018. The agency is developing its Integrated Program Review (IPR) for the 2018-2019 rate period.

More Info: The BPA Draft Energy Efficiency Action Plan is here: [link](#)

¹ <http://www.nwcouncil.org/media/7150399/3.pdf>

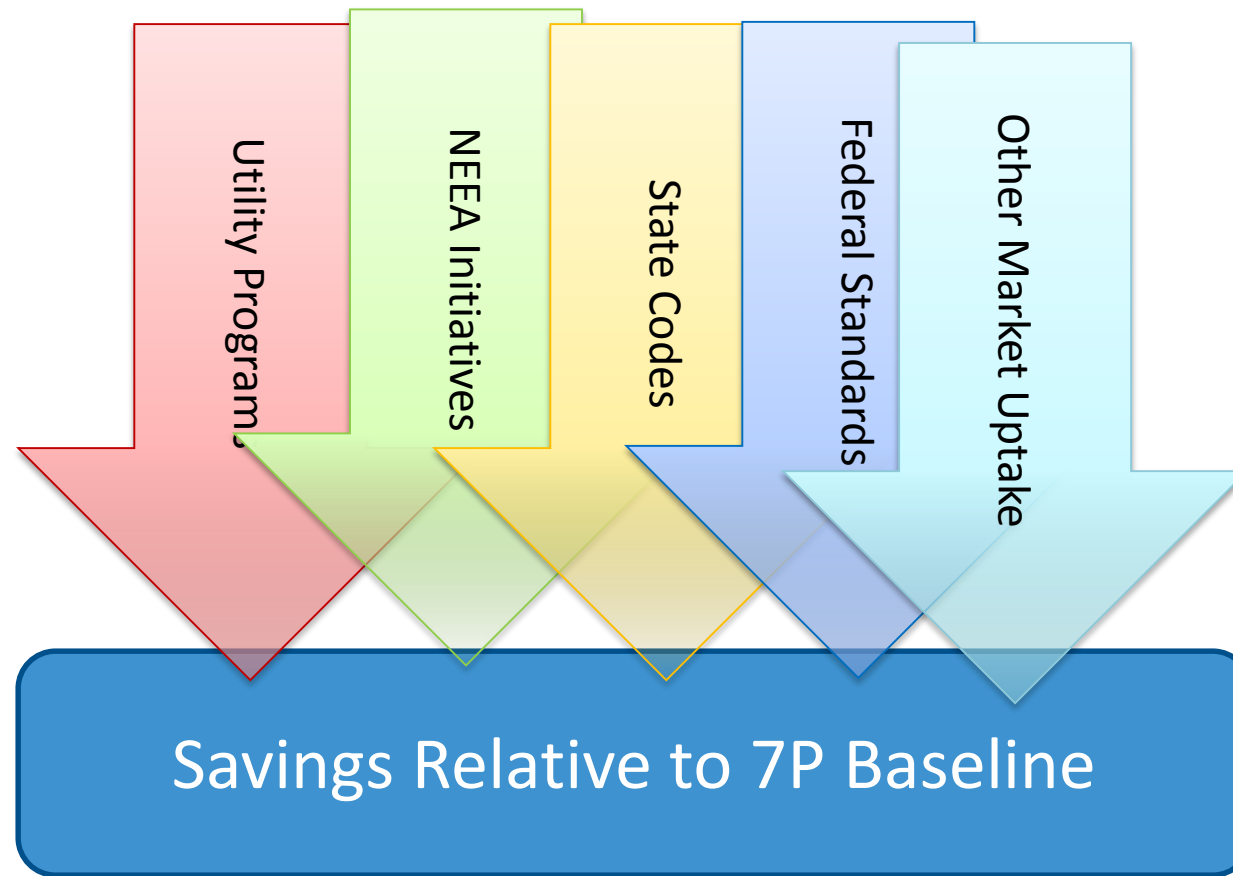
BPA EE Action Plan

- Audience
- Resources
- Strategies

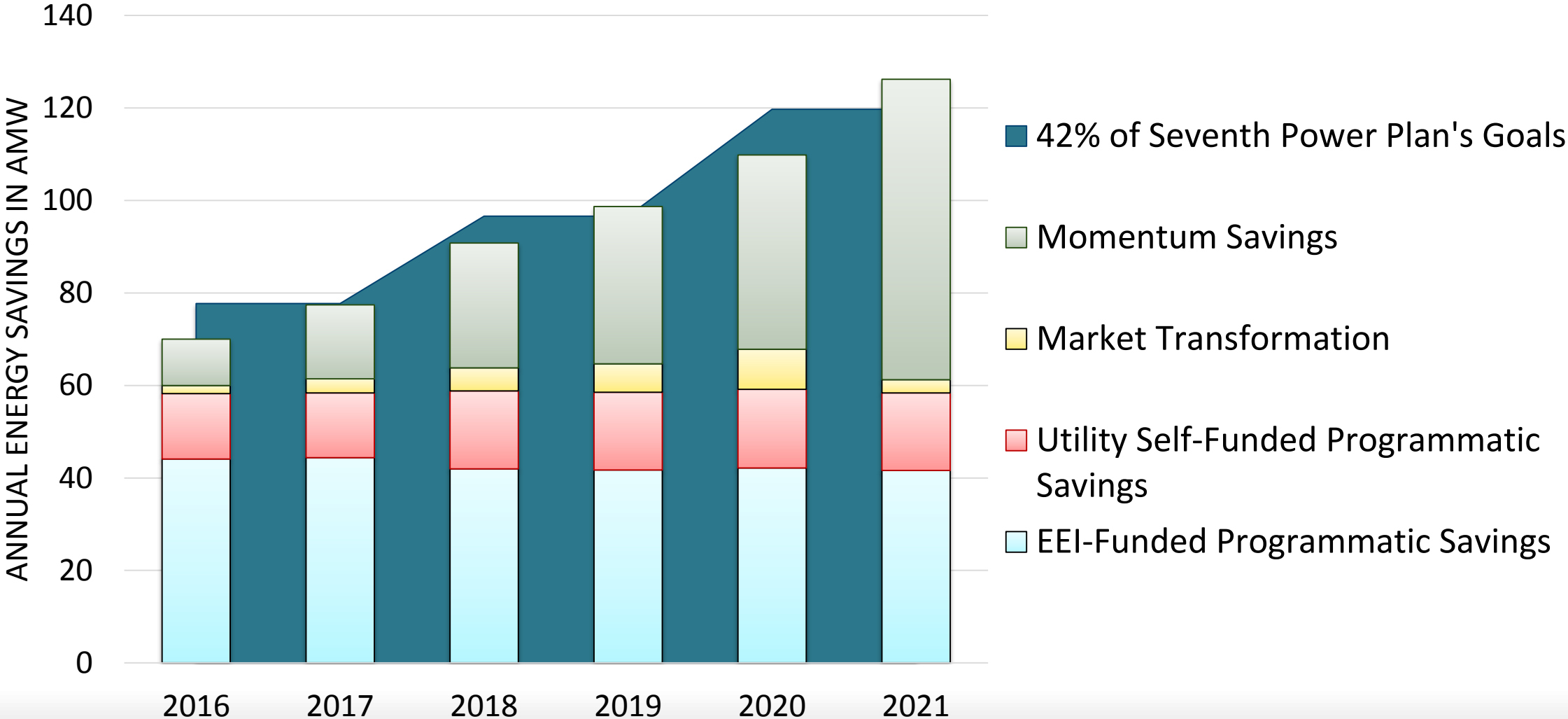


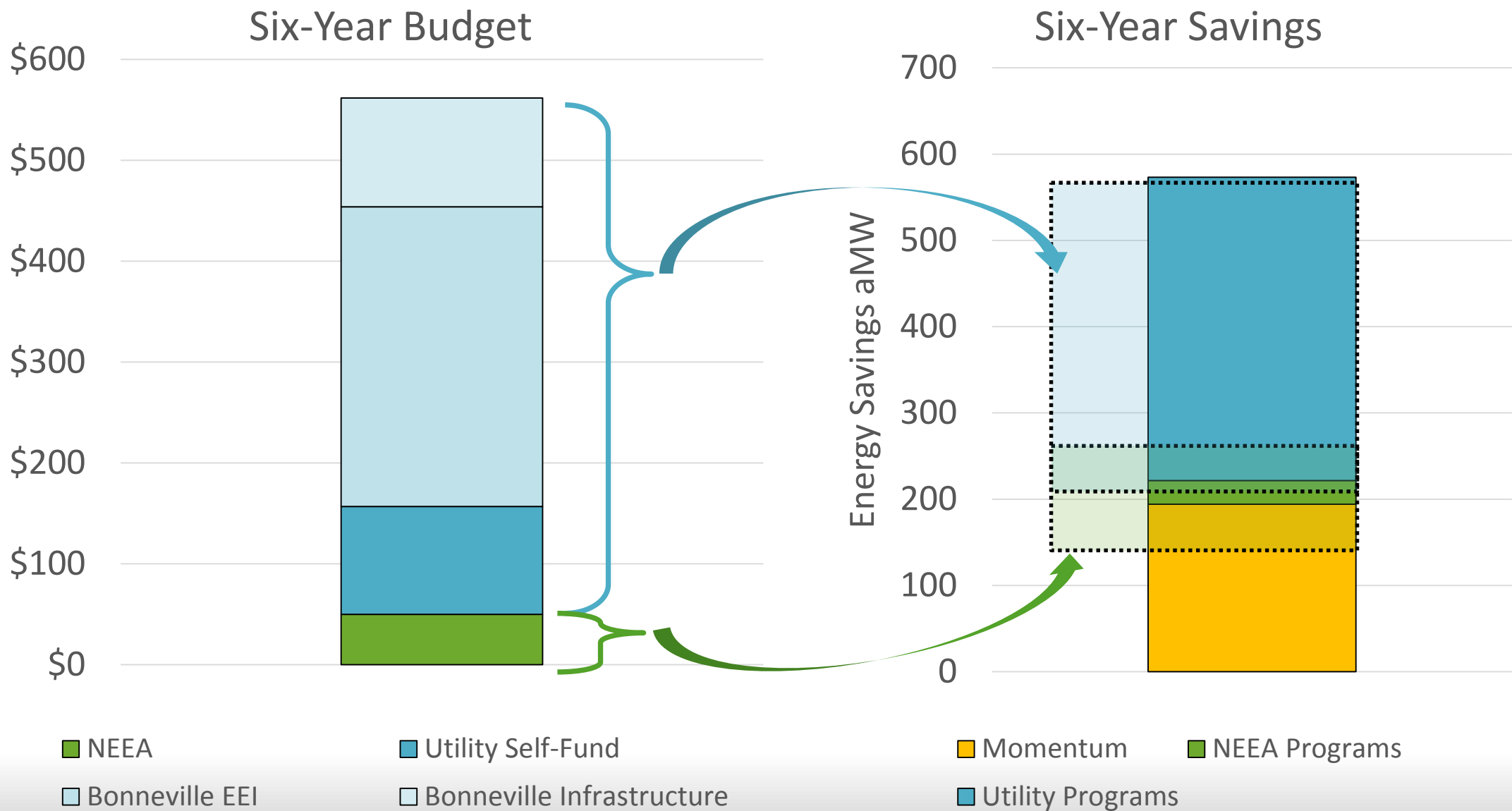
https://www.bpa.gov/EE/Policy/EEPlan/Documents/BPA_EE_Action_Plan_Draft_External_Review.pdf

All Mechanisms Contribute to Plan Savings

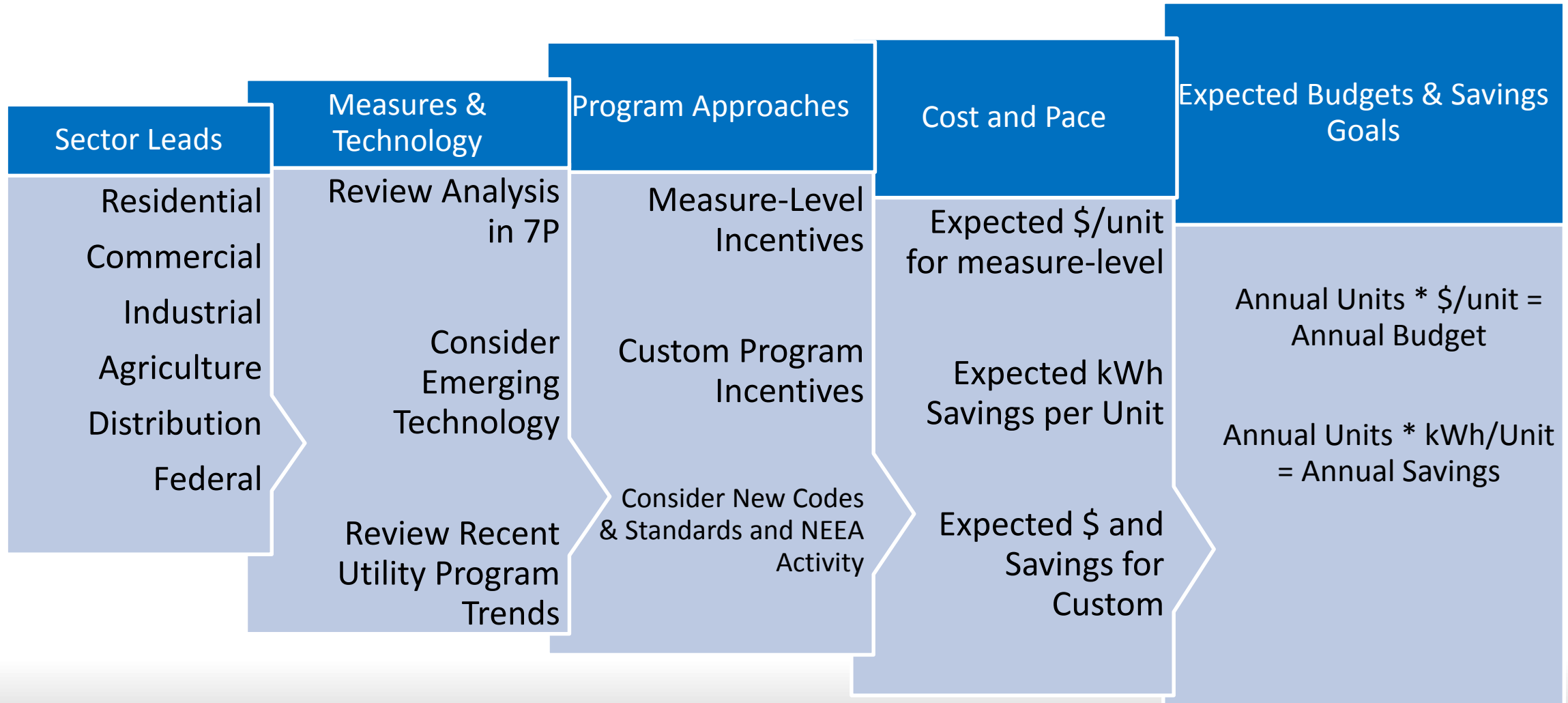


Bonneville EE Plan Compared to Council Plan Goals

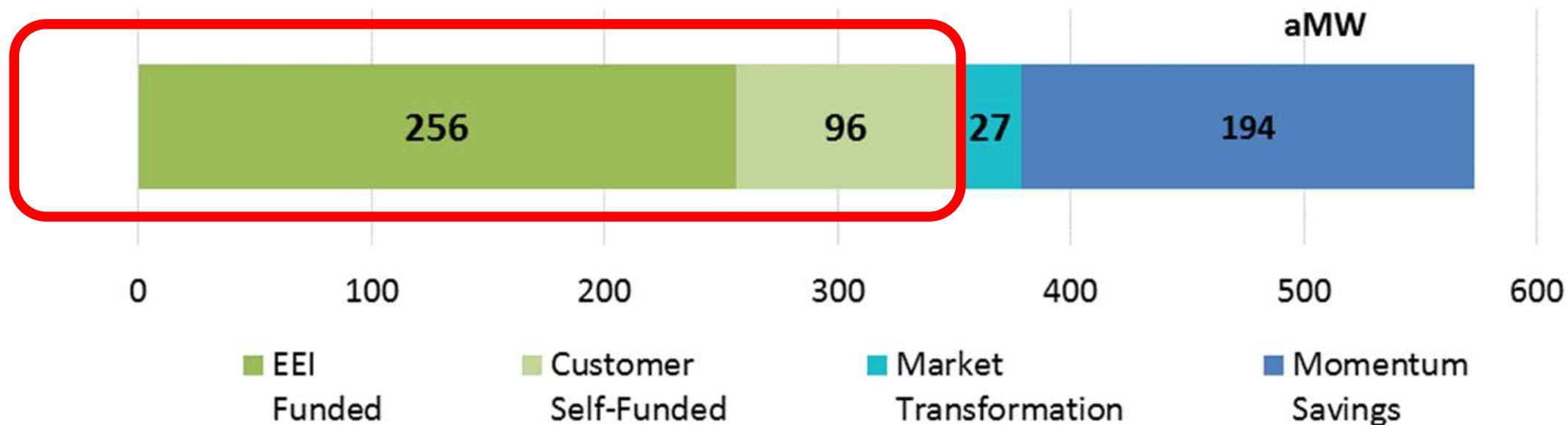




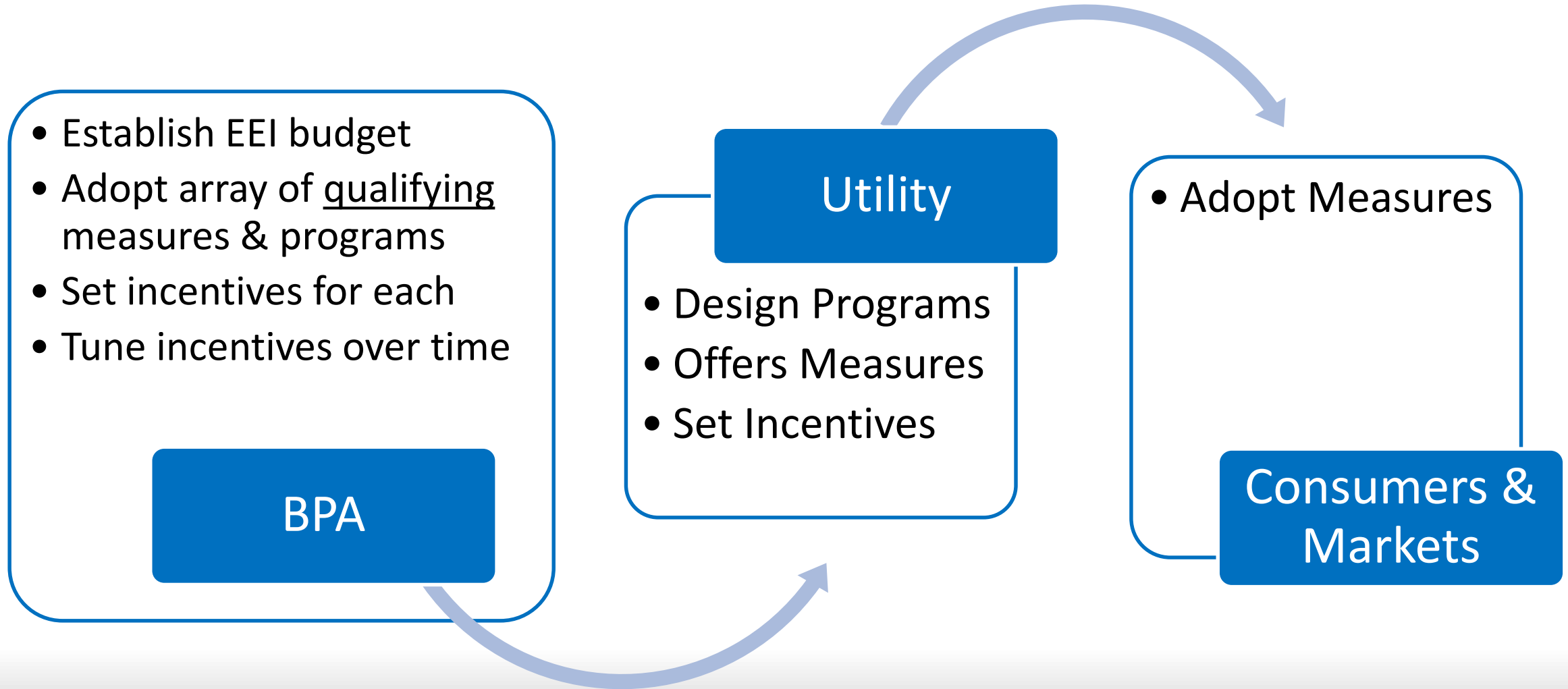
Program Savings & Budgets Developed



BPA Plan Expects 60 Percent from Programmatic Savings by 2021

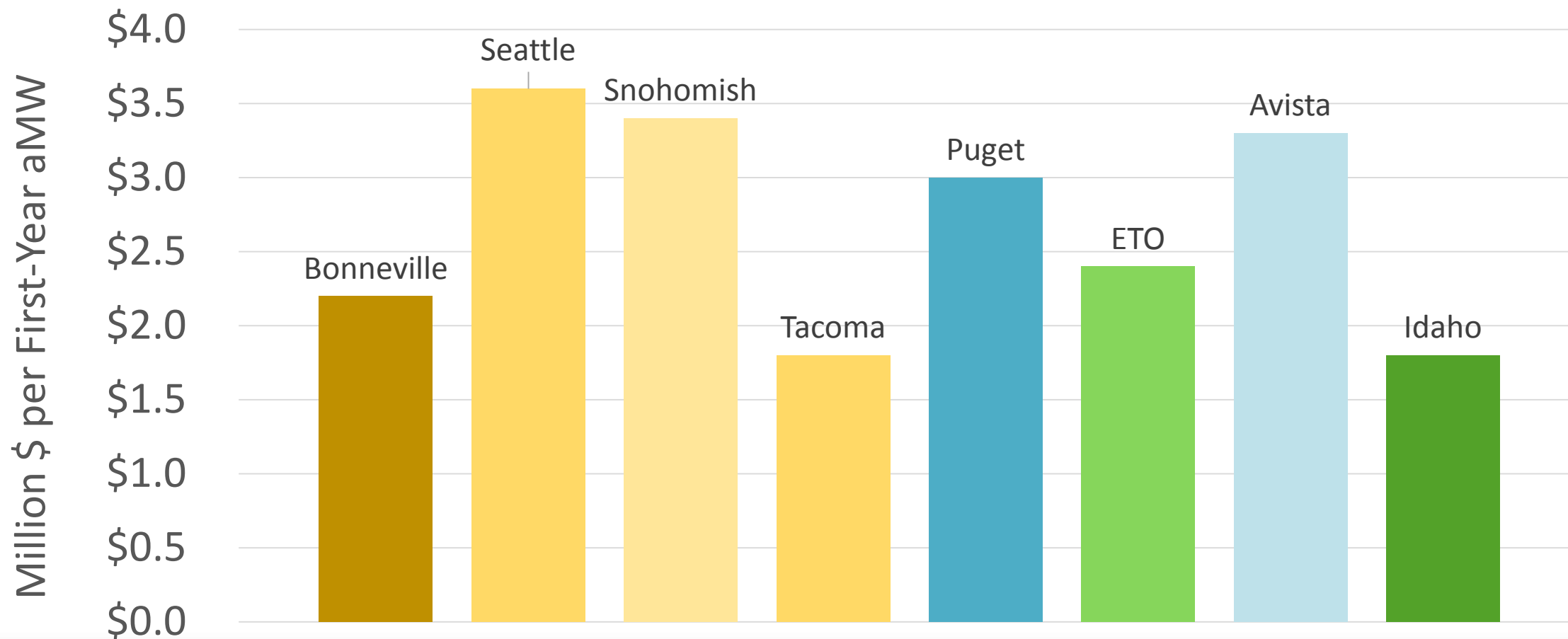


BPA Programmatic Savings



2017 BPA Incentives Low per aMW

Draft Capital Cost of Programmatic Savings 2017*

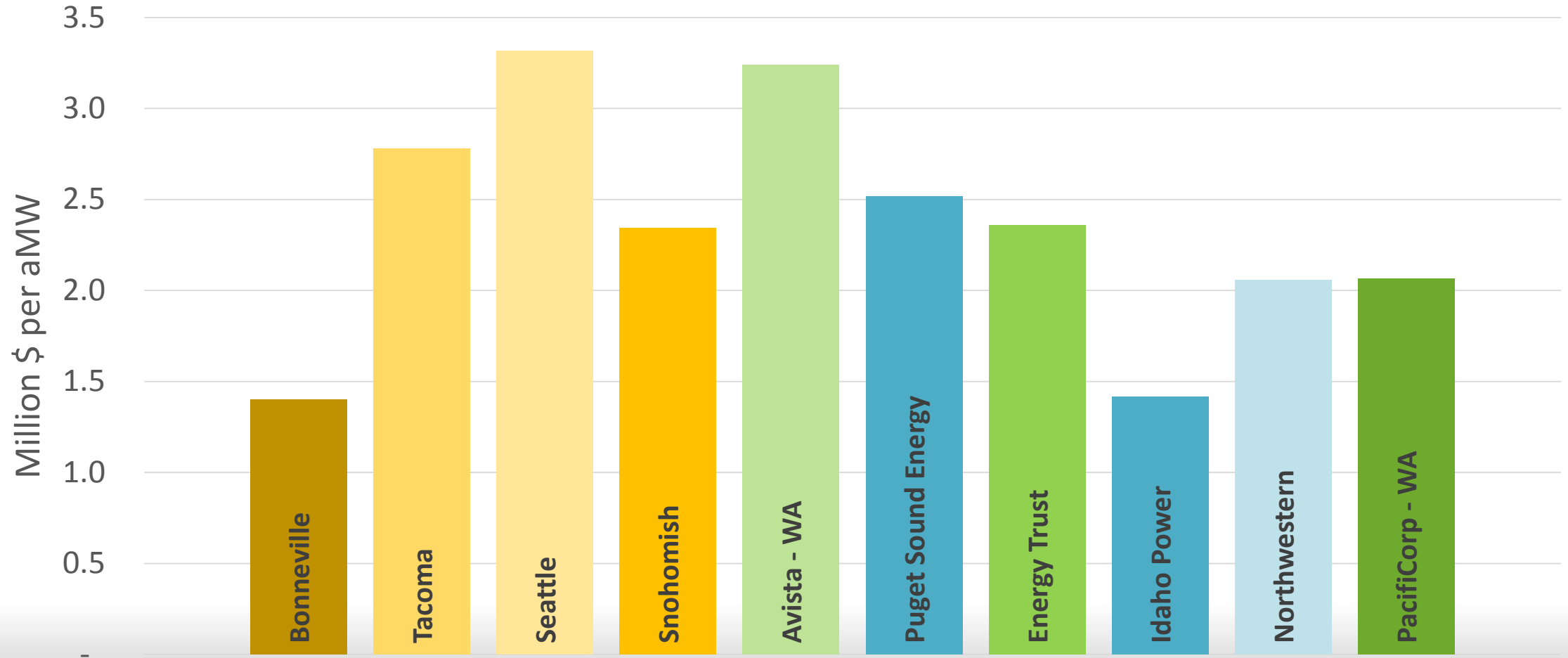


*Exclude NEEA, momentum, codes, standards.

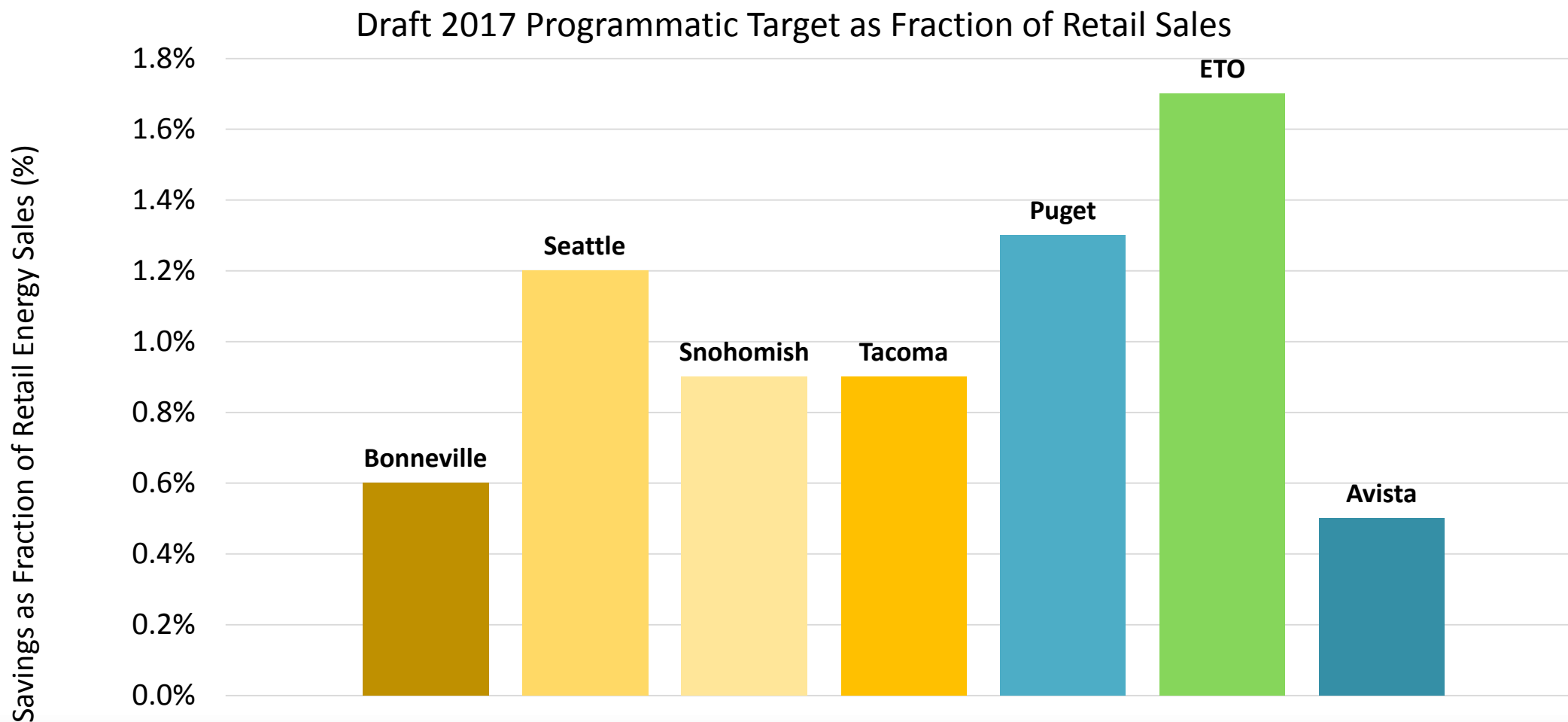
*Include staff & overhead costs

Bonneville Programmatic Incentives Lower

2015 Programmatic Cost Per First-Year Savings (Exclude NEEA & Momentum)



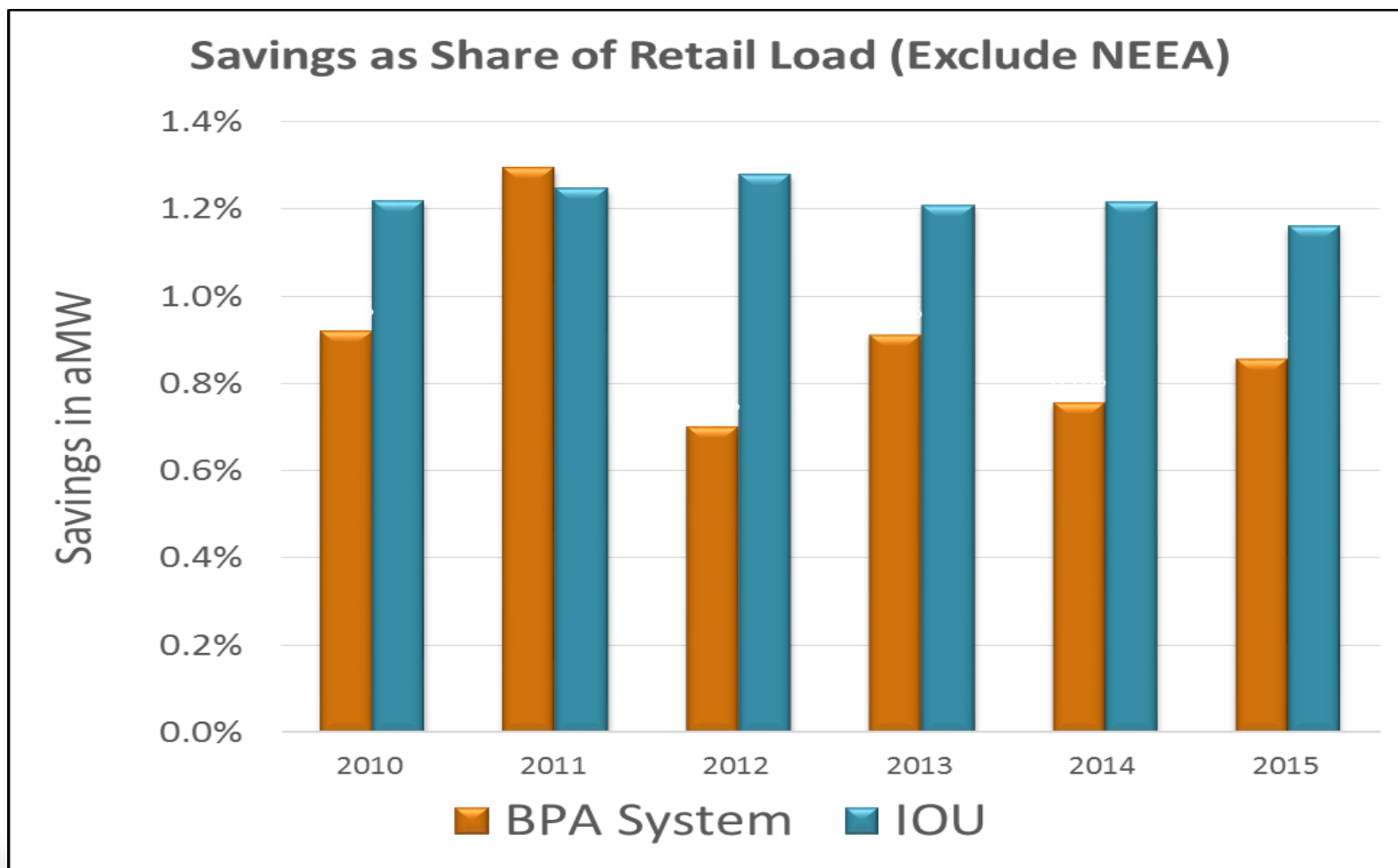
BPA Incentives Target a Smaller Share of Savings



Excluding NEEA, Codes & Standards & Momentum Savings

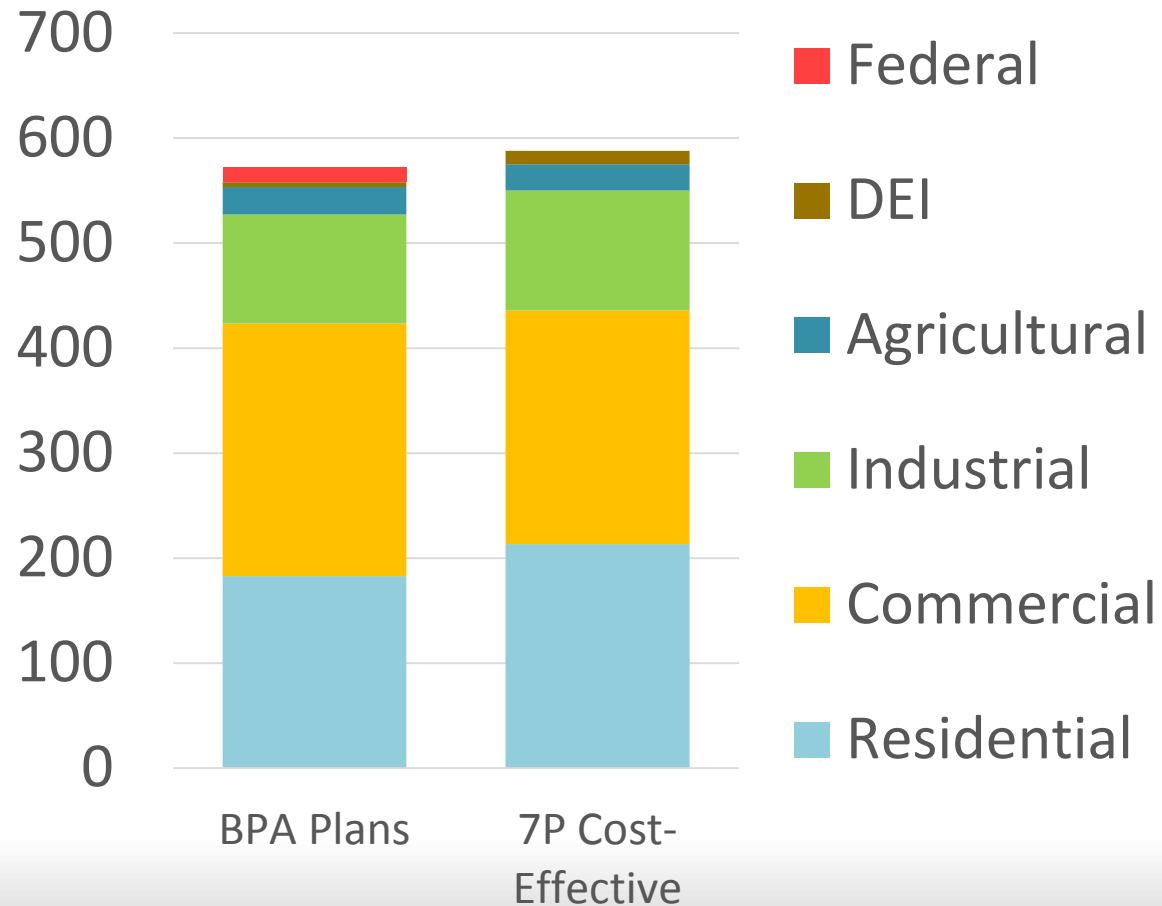


Trends in POU & IOU Savings Relative to Load



BPA & Council Plan Goals by Sector

Savings by Sector



BPA Savings Targets Similar to Seventh Plan by Sector

- More Commercial
- Less Industrial
- Less Distribution
- Less Residential

Residential End Use Shares Compared to 7P

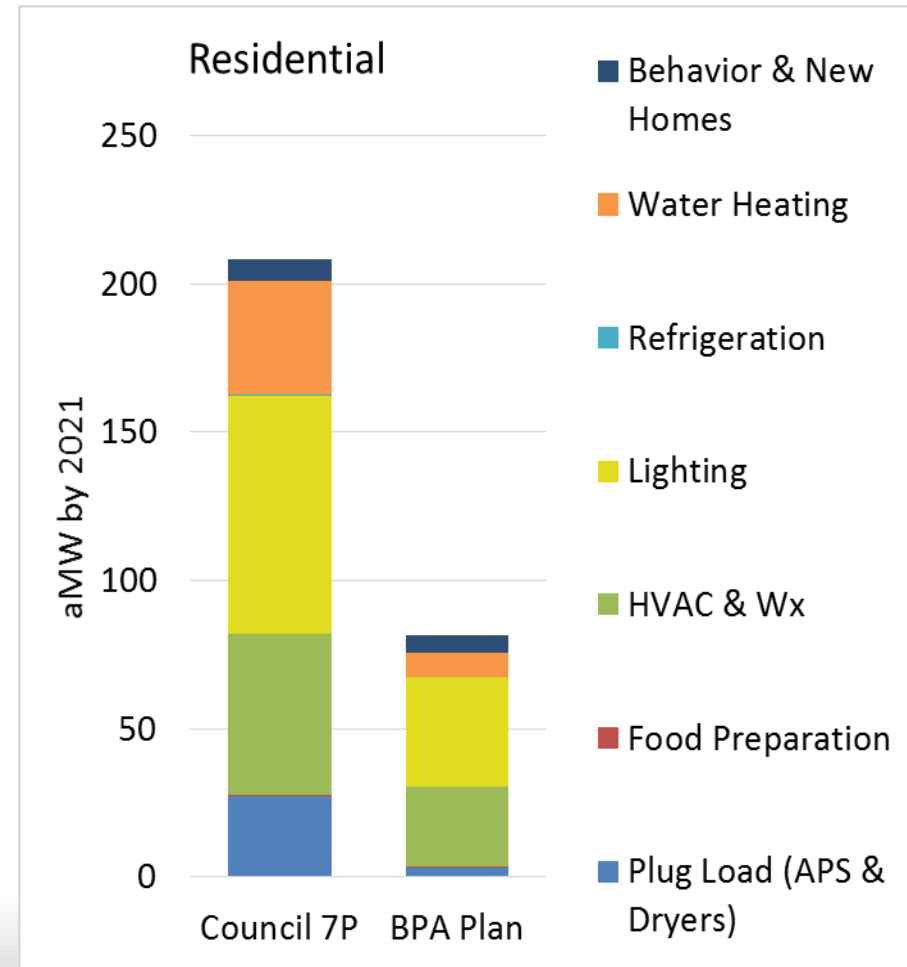
Programmatic Savings Only (Not Including BPA Momentum)

BPA Plan Not Addressing Savings in Some Areas

- Water Heating:
 - BPA 8 of 34 aMW potential
- Weatherization
 - BPA 3.4 of 28 aMW potential
- Plug Loads

Momentum & NEEA May Backfill

- HVAC Equipment & Lighting
- From Codes & Standards & Market Momentum



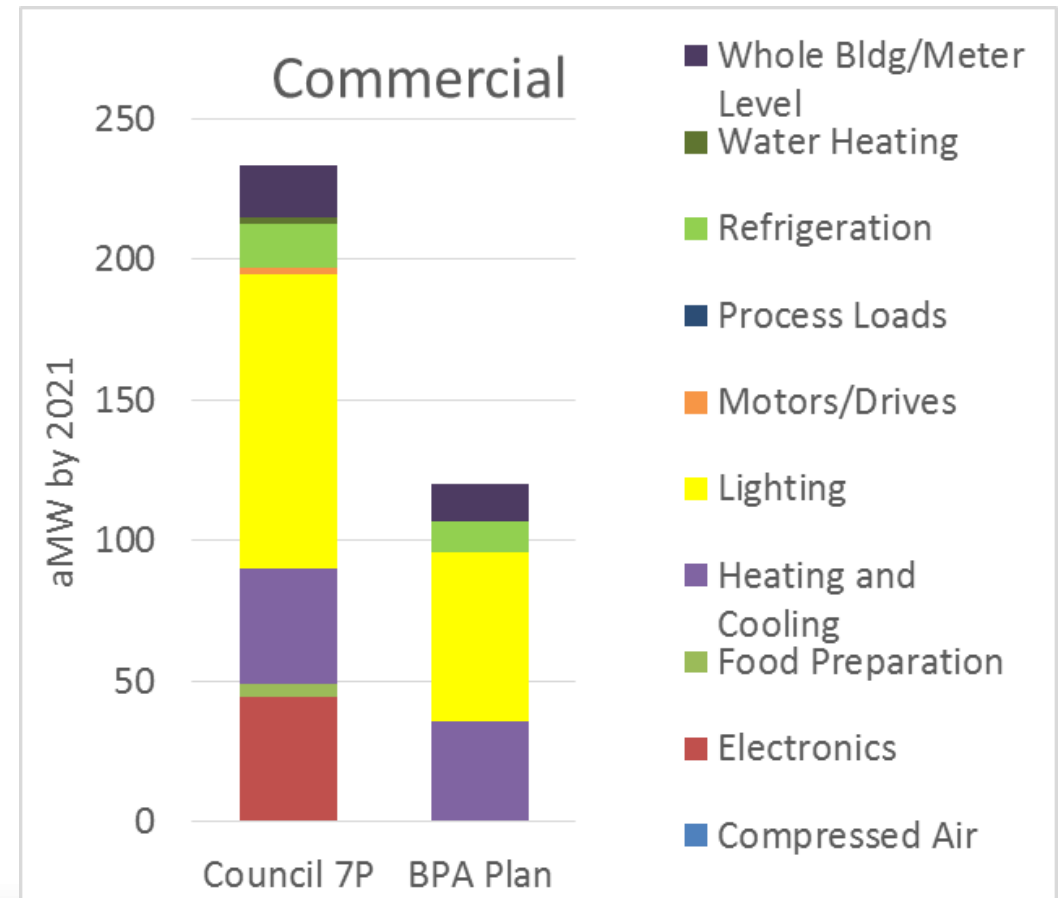
Commercial End Use Shares Compared to 7P Programmatic Savings Only (Not Including BPA Momentum)

BPA Plan Not Addressing Savings in Some Areas

- **Embedded Data Centers:**
 - BPA near-zero of 23 aMW potential
- **Plug Loads**
 - BPA near-zero of 12 aMW potential

Momentum & NEEA May Backfill

- HVAC Equipment & Lighting
- From Codes & Standards & Market Momentum



Industrial End Use Shares Compared to 7P

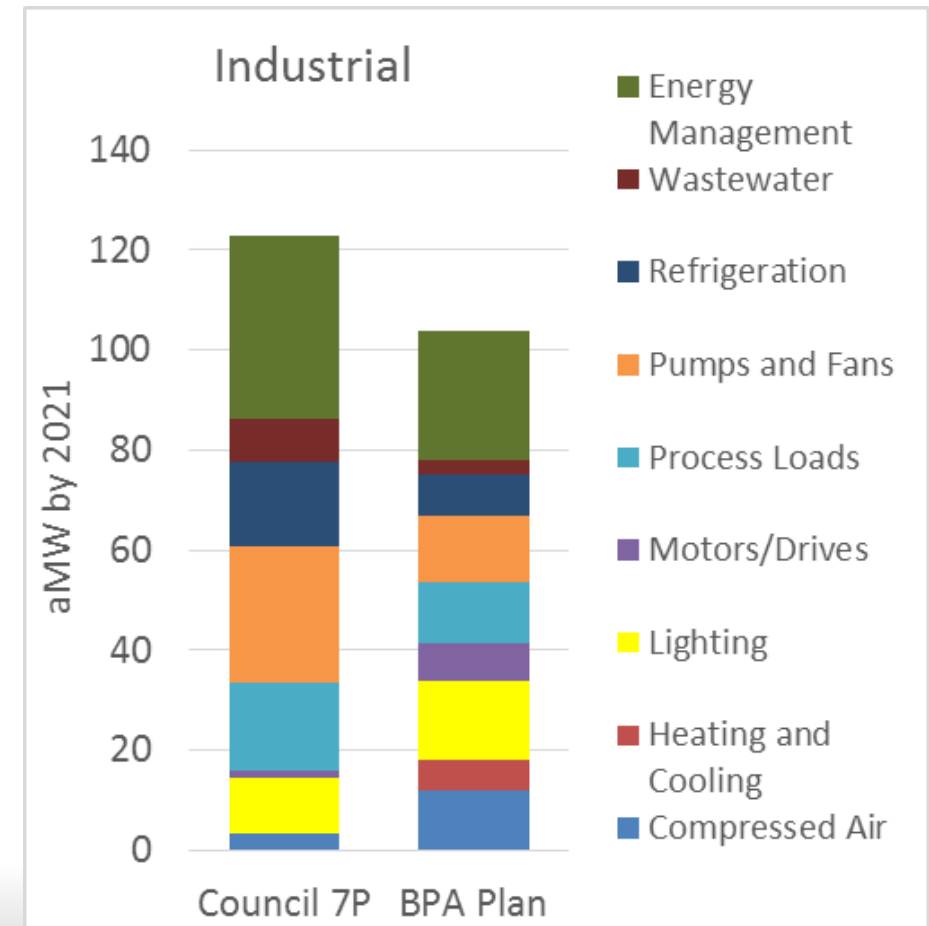
Programmatic Savings Only (Not Including BPA Momentum)

BPA Plan Similar

- More Lighting & Compressed Air
- Less Pumps & Fans & Refrigeration
- Result of BPA-Specific Analysis

Standards May Backfill Some

- Pump & Fan Systems



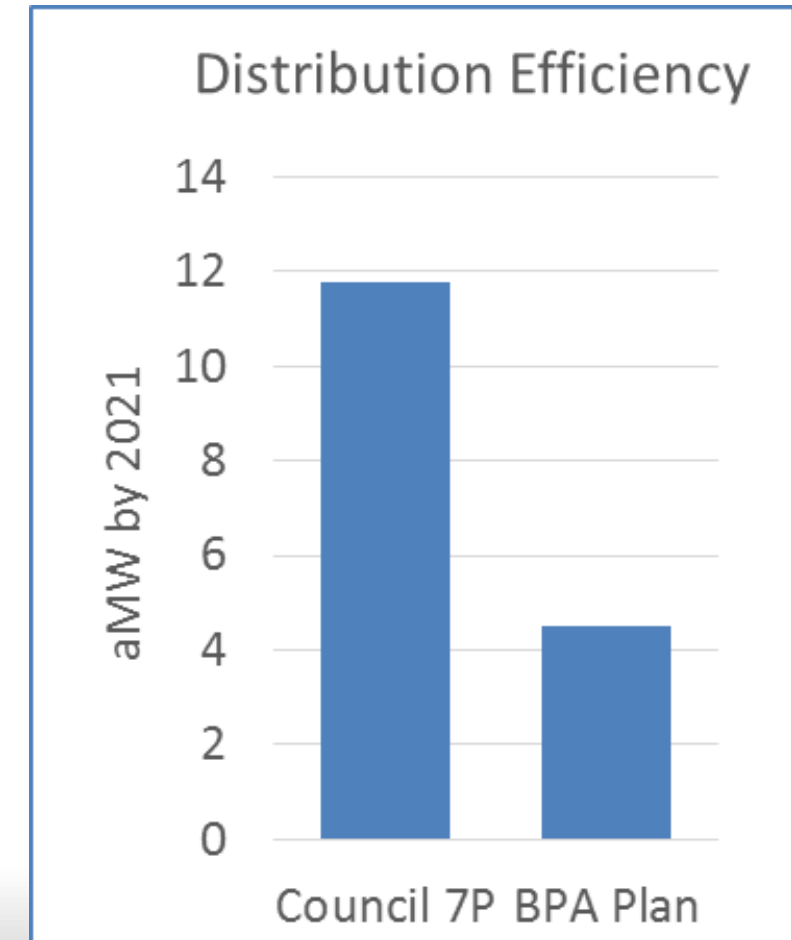
Distribution System Compared to 7P

Programmatic Savings Only (Not Including BPA Momentum)

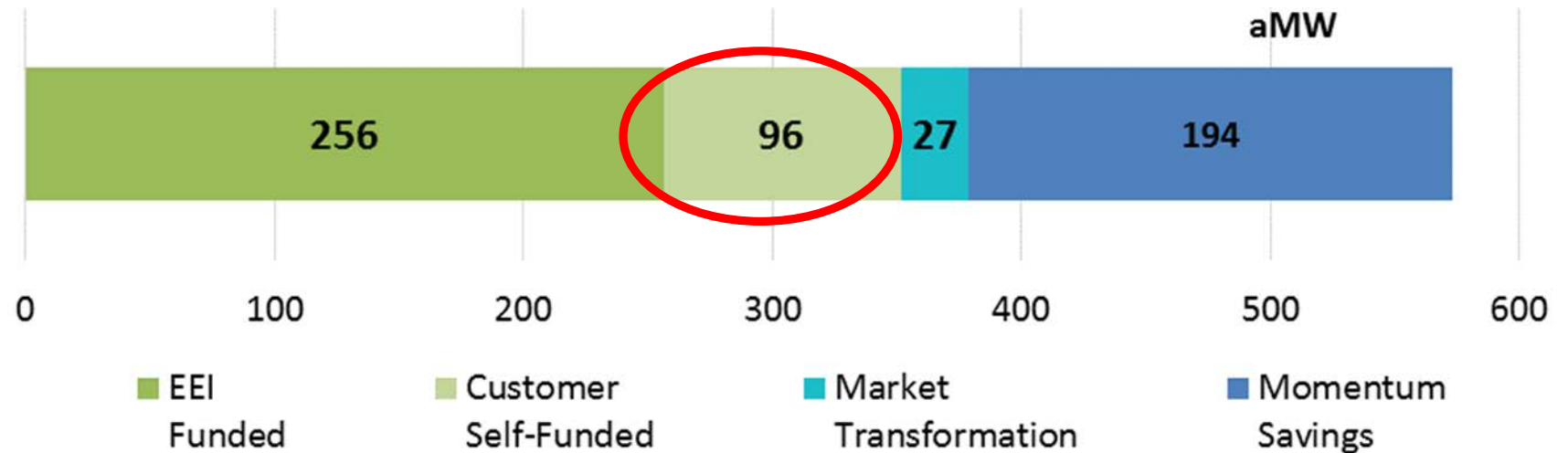
BPA Plan Addressing Less

- BPA 4.5 of 12 aMW Potential

MCS-2 calls for BPA to determine potential savings, identify barriers, and develop program assistance or distribution system performance standards by 2017



BPA Plan Expects 96 aMW from Utility-Self Funding by 2021

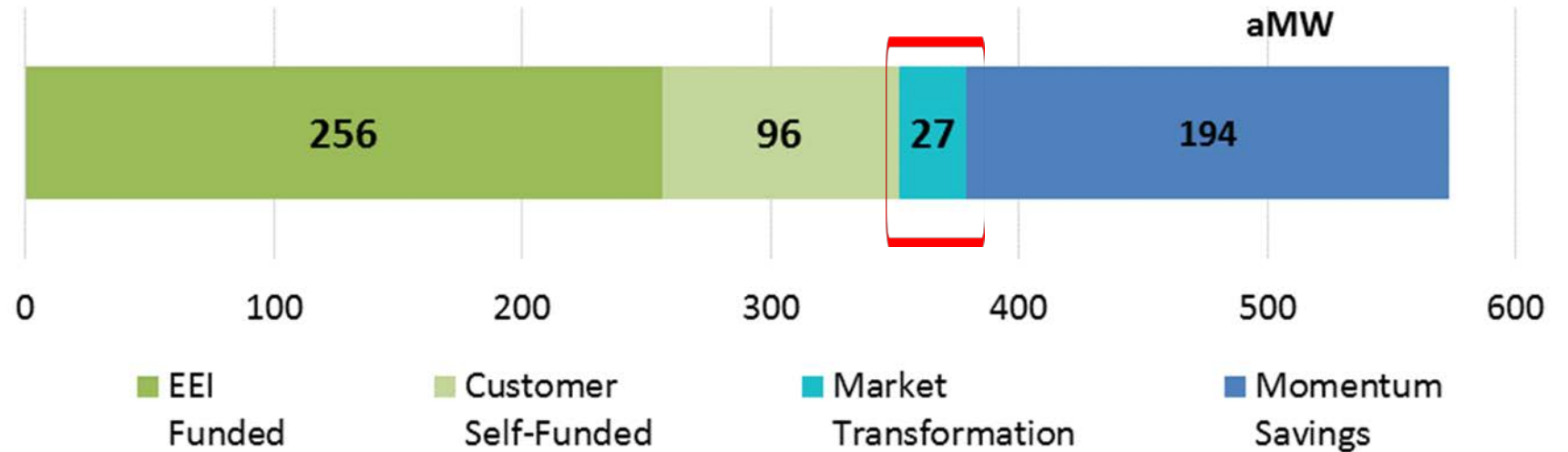


- Customer self-funding expectation is an assumption based on last 3 years
- About 80% of utilities, and 60% of load, did little or no self-funding
- Most of historical self-funding from six large utilities
- Self-funded EE a significant risk area for the BPA EE Plan
- EE Plan should incorporate self-funding plans of large utilities

Staff Review of Utility-Self Funding Expectations

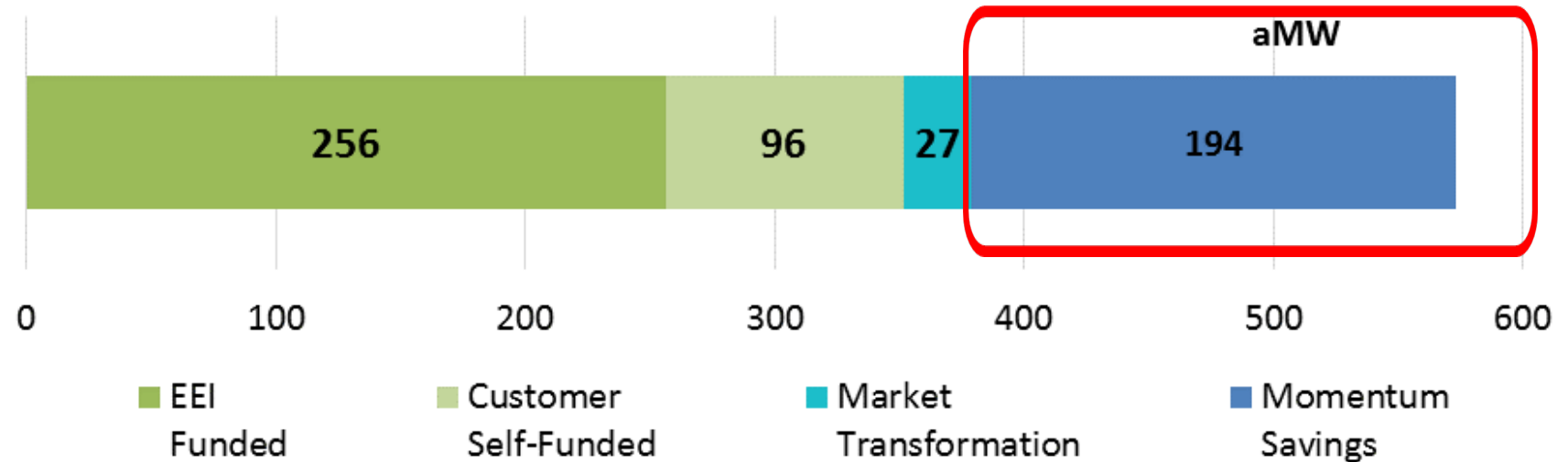
- Reviewed short-term plans of 14 WA utilities
 - Targets declining somewhat 2014-2015 and 2016-2017
 - But accomplishments 30-60% over targets
- Utility Plans for 2018-2019 not yet available
- Reviewed 2017 self-funding plans of 5 largest utilities
 - Four holding constant on self-funding
 - One quitting self-funding

NEEA Savings



- BPA Forecast from NEEA Business Plan
- Shifts about 40 aMW of NEEA Market Savings to Momentum

Nearly 200 aMW from Momentum Savings in Draft BPA EE Plan



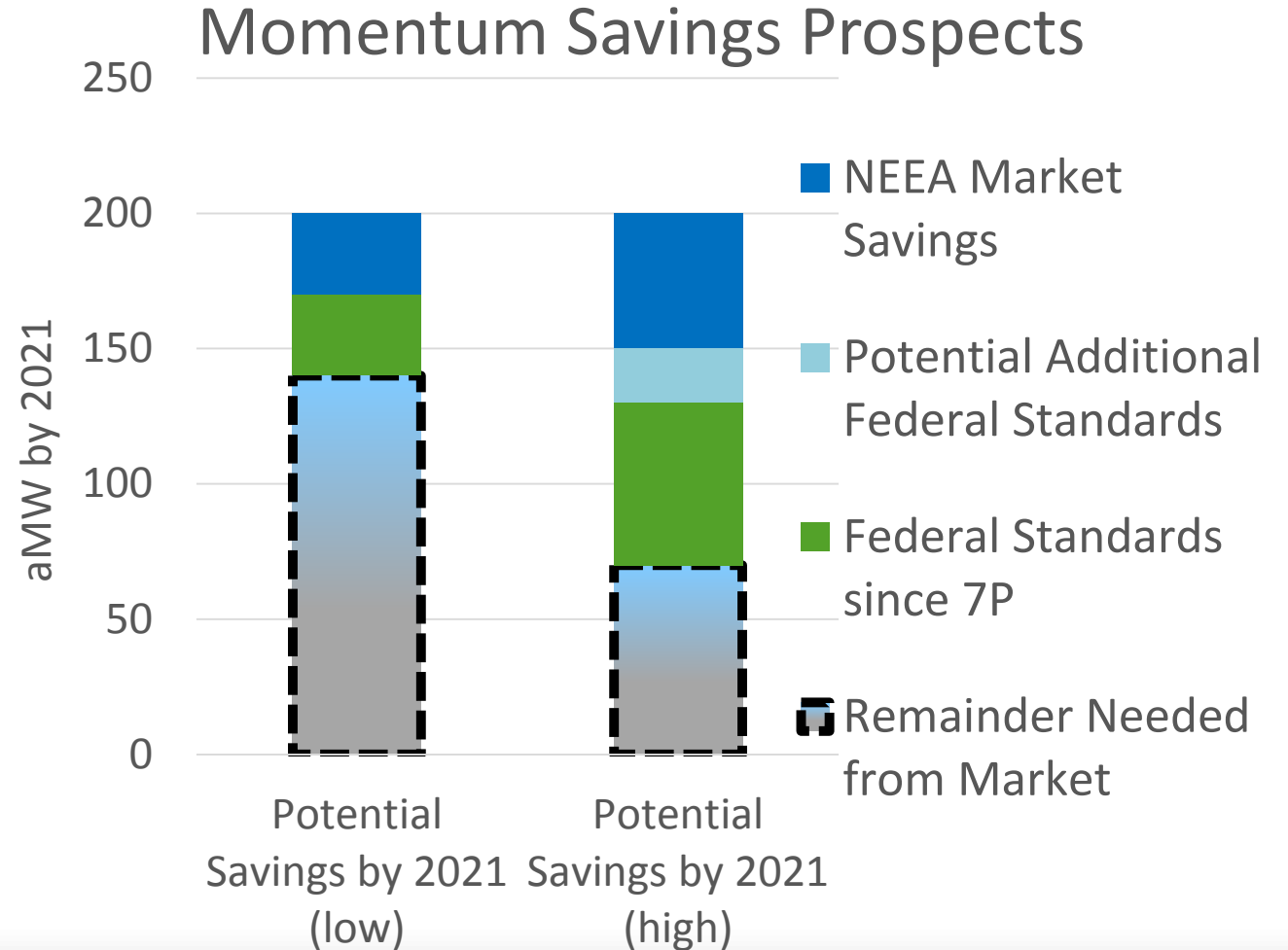
- BPA EE Plan Estimate is a placeholder
- Estimates being refined by BPA next two months

Some Momentum from New Codes & Standards

- **Standards & codes adopted since Dec 31, 2014**
 - **Adopted 14 new Federal Standards with Electric Savings**
 - Staff estimates 40 – 50 aMW by 2021 for BPA share
 - **More Federal Standards in the Works**
 - Pump & Fan Systems plus others
 - Modest savings by 2021 due to schedule of adoption
 - **State Building Codes**
 - About 3 aMW already in NEEA forecast by 2021

Needed from Market Momentum

- Gap of 70-130 aMW needed from Market
- Likely Candidates
 - Solid State Lighting (LED)
 - HVAC Equipment
- Prognosis
 - Large reliance on Market
 - Large degree of uncertainty
 - Not impossible



SUMMARY

Draft Plan almost hits BPA share of Council goals

Major Areas of Risk

- Market Momentum risk - particularly for lighting
- Standards effectiveness & timing
- Utility Self-Funding
- Effectiveness of EEI incentives
- Flat budget for EEI, while goals increase over time
- Lagging ability to increase budgets
- Ability to adjust EEI incentives timely manner



Staff Recommendation Summary (1)

1. Add strategies to track & manage all key risks:
2. Monitor effectiveness of EEI incentives – adjust
3. Preserve ability to tune and shift EEI
4. Resolve time gap between lagging savings data and funding decision for next IRP

Staff Recommendation Summary (2)

- Address measures not targeted
- Address all Council EE Action Plan items
- Revise discussion of opportunities and barriers
- Incorporate 7P findings on value of EE
- Incorporate links with emerging technology work
- Technical corrections